Paper 103:

Social Media Influencing C2
in Underdeveloped and Degraded Operational Environments

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Outline

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- Digital Age Lessons in Underdeveloped and Degraded Operational Environments

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Introduction

- What is Social Media?
- ***Online technologies and practices to share content, opinions and information, promote discussion and build relationships****. Social media services and tools involve a combination of technology, telecommunications and social interaction. They can use a variety of formats, including text, pictures, audio and video.*

Source: European Commission, Communicating with the outside world – Guidelines for All Staff on the Use of Social Media

Introduction

- ## Social Media

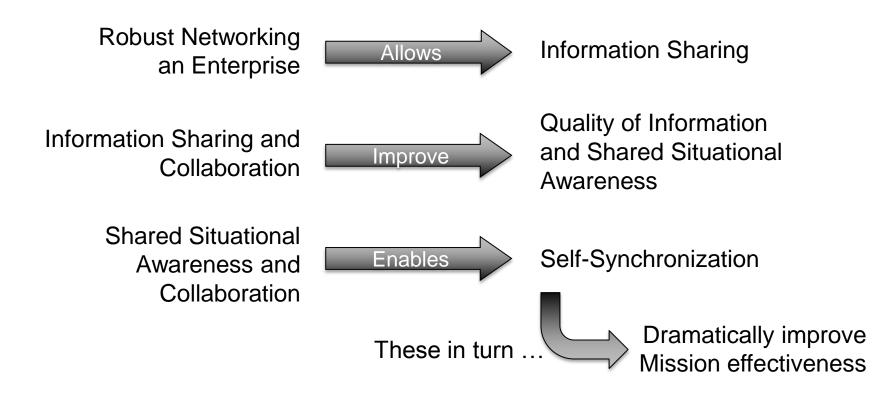 - Is Changing the *Rules of the Game*

  - From a *need-to-know*

  - To a *need-to-share*

Introduction

- ## Social Media Relevance?

Twitter	Facebook	Google+	YouTube	Mobile
500 Million accounts 40+ Billion tweets 175 Million tweets a day 11 new topics (*hashtag*) created every second	850+ million members 31% check in once a day Avg of 20 min per day 2.7 billion likes per day 100 billion connections 20 million apps installed daily 250 million photos daily 425 million access via mobile	90+ million users g+ button is served 5 billion times a day g+ users: 44% of users are single 29% female / 71% male 20% are students Average of 6 minutes on site	4 billion videos viewed every day - 1 trillion in 2011 24 hours of video uploaded, every 24 secs 2.9 billion hours a month on the site, 326,294 years 800 million users per month Auto speech recognition translates video and captions in 43 languages	5.9 Billion subscribers 8 Trillion SMS messages sent in 2011 11+ Billion apps downloaded, 1 in 4 never used again The number of mobile searches quadrupled in the last year 8.49% of global web site hits come from mobile

Source: May 2012 Latest Social Media Statistics
http://news.cnet.com/2300-1025_3-10000385.html

Introduction

Network Centric Warfare tenets:

Robust Networking an Enterprise	**Allows** →	Information Sharing
Information Sharing and Collaboration	**Improve** →	Quality of Information and Shared Situational Awareness
Shared Situational Awareness and Collaboration	**Enables** →	Self-Synchronization

These in turn … → Dramatically improve Mission effectiveness

Digital Age Lessons
in Underdeveloped and Degraded Operational Environments

- **NATURAL DISASTER RESPONSES**
  - **December 26th 2004 – The Indian Ocean Tsunami**
  - **August 29th 2005 – Hurricane Katrina**
  - **October 2007 Southern California Wildfires**
  - **January 12th 2010 – The Haiti Earthquake**
  - **January 27th 2010 – The Chilean Earthquake**
  - **January 2011 Australian Floods**
  - **March 11th 2011 – The Great Japan Earthquake**
  - **October 29th 2012 – Hurricane Sandy**

Digital Age Lessons
in Underdeveloped and Degraded Operational Environments

- **RESPONSE TO TERRORIST ACTIVITY**
  - **March 11th 2004 – Madrid Train Bombings**
  - **July 7th 2005 – London Tube Bombings**
  - **April 16th 2007 – Virginia Tech Shooting**
  - **July 22nd 2011 – Norwegian Terrorist Attacks**

- **SOCIAL TURMOIL AND UPHEAVALS**
  - **January 2003 China SARS Epidemic**
  - **2011 Middle East Upheavals**
    - *January 2011 – Egypt Upheaval*
  - **August 2011 – England Riots**

Conditions Necessary for C2 Success

- Interoperability

- Reach

- Richness

- Quality of Interaction

- Trust

- Privacy Data Protection

Conditions Necessary for C2 Success

- **Interoperability** (technical, semantic and social)

Technical interoperability: ability of devices in use to connect directly.

For example, a mobile phone can *Tweet* if it has Internet access and accesses the Twitter webpage.

Semantic interoperability: ability to understand the message received.

In Haiti, pleas for help in the Kreyol language were not understood by the English or French-speaking responders and volunteers and required translation. Groups of volunteers emerged to process translations and expedite rescue services.

Social interoperability: ability and willingness to exchange information and work together.

In Egypt, blogs proved to be linkages that cut across the political and religious divides that had prevented recognition of common perceptions, common interests and the potential for mutually supporting actions.

Conditions Necessary for C2 Success

- **Reach**

Social Media has dramatically increased reach – **towards an always connected society**

- Both in developed and in developing countries there are significant social media dynamics, as observed in the <u>Haiti Earthquake</u> and the <u>Indian Ocean Tsunami</u> case studies.
- In <u>Middle East countries</u>, social media platforms enabled social mobilization and active informed citizenship.
- Defense and Security entities, traditionally operating in closed non-interoperable networks, are using data from <u>open-platforms such as Ushahidi</u> (as in Haiti).

Some <u>obstacles</u> still remain:
- Decision to shut down cell phone services fearing they might be used to trigger explosive devices during the <u>Madrid bombing</u>.
- Refusal of the <u>Norwegian</u> emergency call center operators to put through emergency calls from the island because the downtown bombing was perceived as the crucial event.
- In several events, the disaster cause destruction of the communications infrastructure.
- Closed platforms used by defense and security entities.

Conditions Necessary for C2 Success

- **Richness**

- Social media evolution: from text and chat to voice, imagery and video.

- Services have become routinized in responding to disasters: people finders, photo posting and digital mapping.

- Use of existing social media tools (Facebook, Twitter, YouTube, Flickr)

- Diversity allows selection according to the situation:
  - Haitians trapped in rubble used basic text messaging (voice calls would not pass through).
  - To not give away their hiding place, youngsters in the Utøya island used text messages to alert relatives and authorities.

- Convey right messages across specific audiences: consider cultural backgrounds, language, age, etc.
  - The email sent to students by the Virgina Tech management on the shootings day was not seen by all students and most of the students who read it did not grasp its urgency.

Conditions Necessary for C2 Success

- **Quality of Interaction**

- Texts and voice chat remain vital

- Improved (global) dialogue: online fora, blogs and town meetings

- Rich <u>bi-directional</u> participation by interested citizens across the globe: near real-time one-to-one, one-to-many and many-to-many online communications and collaboration platforms

- Participants are engaged in high quality interactions:

  Rich content in the *right* format with very high *signal-to-noise* ratio.

Conditions Necessary for C2 Success

- **Trust**

- The most crucial condition and also among the most subtle and difficult to attain
- For individuals and groups to act in concert, they must trust: the <u>information</u>, the <u>source</u>(s) and the <u>integrity of the medium</u>.
- <u>Willingness to participate</u> in online social media communities and networks requires trust that the act of participation will not be punished or misused, either from peers or from authorities tracking the activity.
- However the record is clear that large numbers of citizens have chosen to participate in activities mobilized and coordinated through social media platforms
- Likewise, organizations are increasingly aware that social media are adequate platforms to know rumors and correct them:
  - FEMA's recently created an area for "<u>rumor control</u>" and FDNY's <u>rumor management</u> actions during the NY Sandy Hurricane.

Conditions Necessary for C2 Success

- **Privacy Data Protection**

- Cyberspace and social media:
  - Relatively unregulated space with respect to data protection and privacy rights;
  - Lack of certainty as to what are the relevant applicable legal frameworks
- Issues include: Handling and mining of personal information; illicit uses of private data (e.g. identity theft); a perceived lack of accountability; the disclosure of data to third parties (without the consent or awareness of those concerned); and data ownership rights.
- These issues are the <u>main blocking factors</u> obstructing the adoption of social media by governmental departments.
  - In the London case study, agencies and families were not informed of victims' identities and statuses since, in the absence of the consent of those concerned, such data processing is prohibited by the UK's Data Protection Act
- Citizens have tended to ignore or accept the risks involved in the exposure of their personal information
  - Nonetheless, recent legal disputes have arisen regarding the right to be forgotten or the right to rectify and erase one's own information.
- Determine the right balance: greater public good and the respect for individual liberty.
- Need for an adequate data protection legislation – towards a responsible digital citizenship

Approaches: iSAR+ and FEMA

European iSAR+ Approach	US FEMA Approach
Considers traditional tools	
Emergency service: 112 and reverse-112. Media broadcast services (TV and radio).	Emergency service: 911 and Reverse 911. Media broadcast services (TV and radio).
Considers online presence	
Internet Presence (webpages and RSS). Email subscription services (currently implemented by a few nations).	Internet Presence (webpages and RSS). Email subscription services (fully implemented). Alert system (Wireless Emergency Alert - WEA).

Approaches: iSAR+ and FEMA

European iSAR+ Approach	US FEMA Approach
Considers new communications and social media channels	
No support for image and video (automatic image and video analysis will be developed). iSAR+ Mobile Applications (multiple apps will allow news, notifications, map-info and SOS-call/message). iSAR+ Social Networks Presence (e.g., Facebook, Twitter, YouTube). Social media monitoring (soft monitoring on an *ad hoc* and manual basis, foreseen machine data mining and processing). SMS-broadcasting (not yet implemented). iSAR+ Social Network and Information Portal (following EU legislation and data privacy recommendations).	No image and video analysis (support via social networks). FEMA Mobile Application (news, notifications, map-info, tutorials/help). FEMA Social Networks Presence and *official* accounts (e.g., Facebook, Twitter, YouTube). Social media monitoring - recently a rumor control section was established. SMS-broadcasting (implemented in several states).

Conclusions

- Social media increasingly influences the _connecting and collaboration_ of citizens and organizations

- Several case studies corroborate the profound influence of social media in society, forcing traditional C2 model organizations to adapt to an Information Age reality.

- Citizens (informed, active and digitally empowered) demand authorities to present enhanced network-enabled connection and collaboration capabilities.

- Specific success conditions have to be in place in order to enable and encourage the use of social media technology to improve traditional C2 models by involving citizens.

Conclusions

- Social media have become ubiquitous in a wide variety of important security-related situations

- Government institutions, international organizations and NGOs have become aware of and more comfortable with the use of social media (informal, rumor management, generate awareness)

- Social media providers (e.g., Google, Digicel, Facebook and Twitter) have proven to be willing partners in crucial situations, pushing information and providing platforms for the coordination of information.

- Open source platforms have created and adopted templates and processes to generate rapid, flexible common responses as situations evolve.

Conclusions

- Social media can be used for good, evil or mixed motives. However, in the case studies reviewed, they often proved to be an important reinforcement to community response providing a growing reach, richness and quality of interaction.

- Trust underlies all successful social media activity – trust in the information, in the information channel and in the source of the information.
  - Efforts to earn and maintain trust are crucial to on-going success.
  - Users have become alert to the use of social media for misinformation and have been able to mount corrective campaigns.

- Data privacy aspects are still a concern in cyberspace, and social media in particular, for its international nature remains outside of country-specific legal framework.

- Information sharing is a trigger activity, enabling improved information quality, creating shared situational awareness, valuing collaboration and promoting self-synchronization.

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